Fig 1

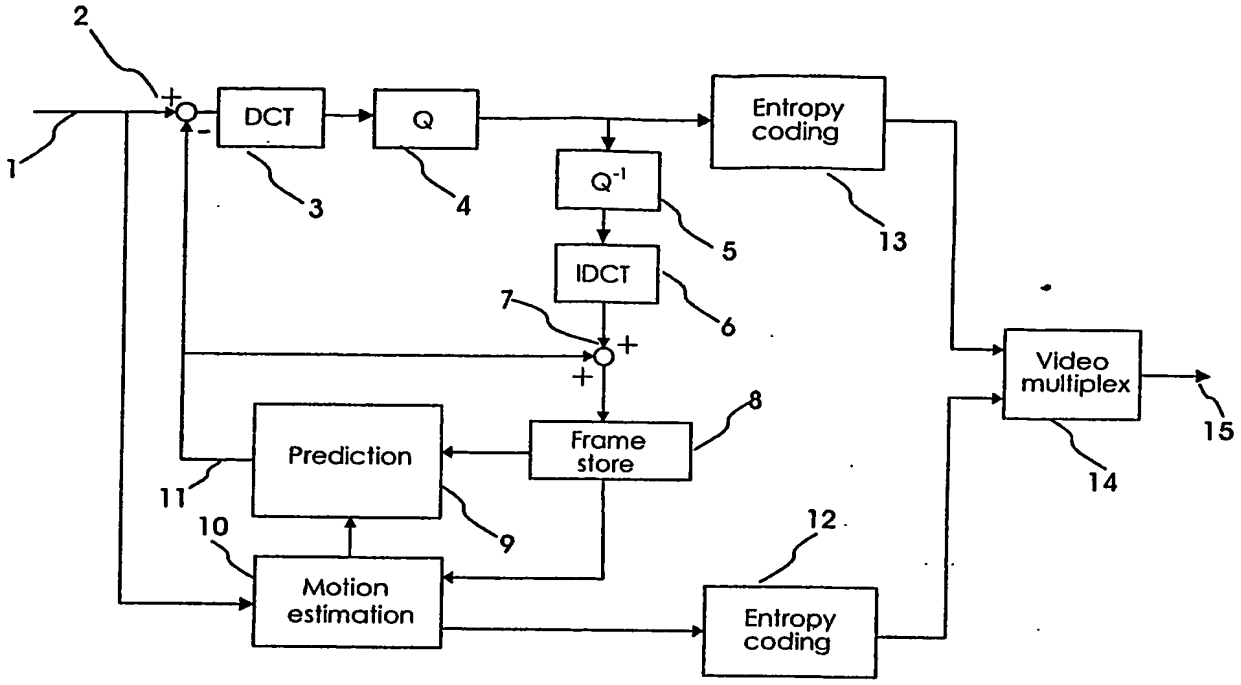

2
1
DCT
Q
Entropy coding
3
4
13
Q^{-1}
5
IDCT
6
7
Video multiplex
15
14
8
Frame store
Prediction
11
9
10
12
Motion estimation
Entropy coding

Fig 2

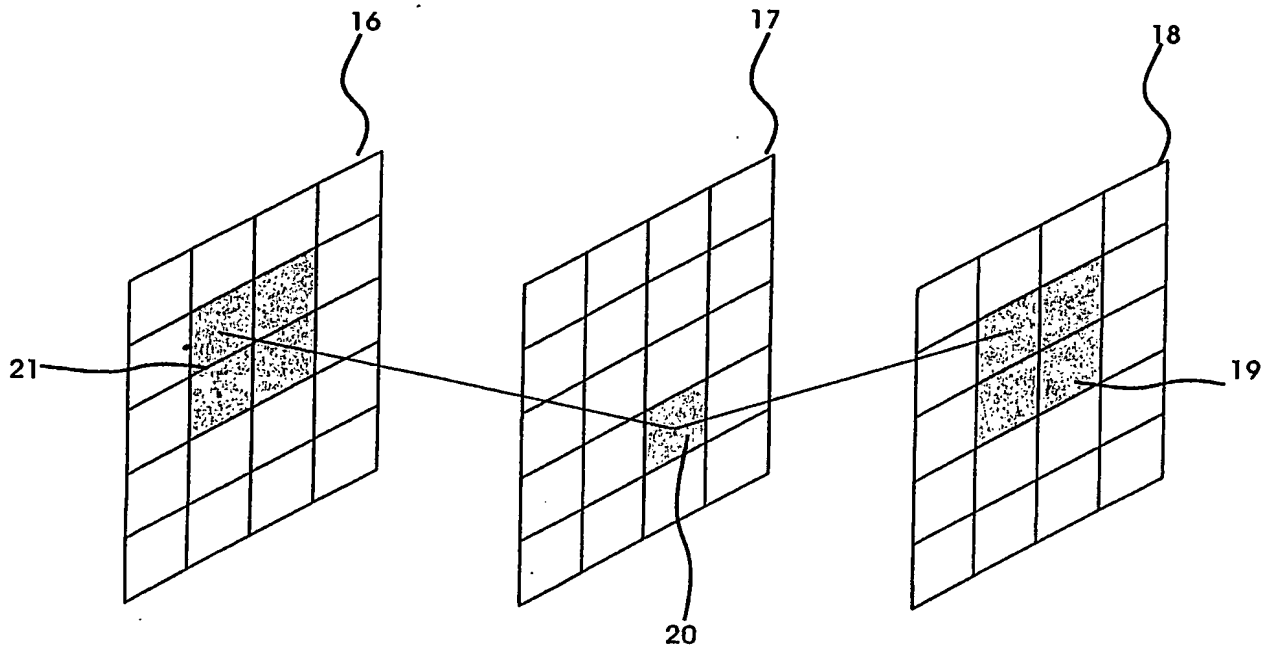

16
17
18
21
19
20

Fig 3

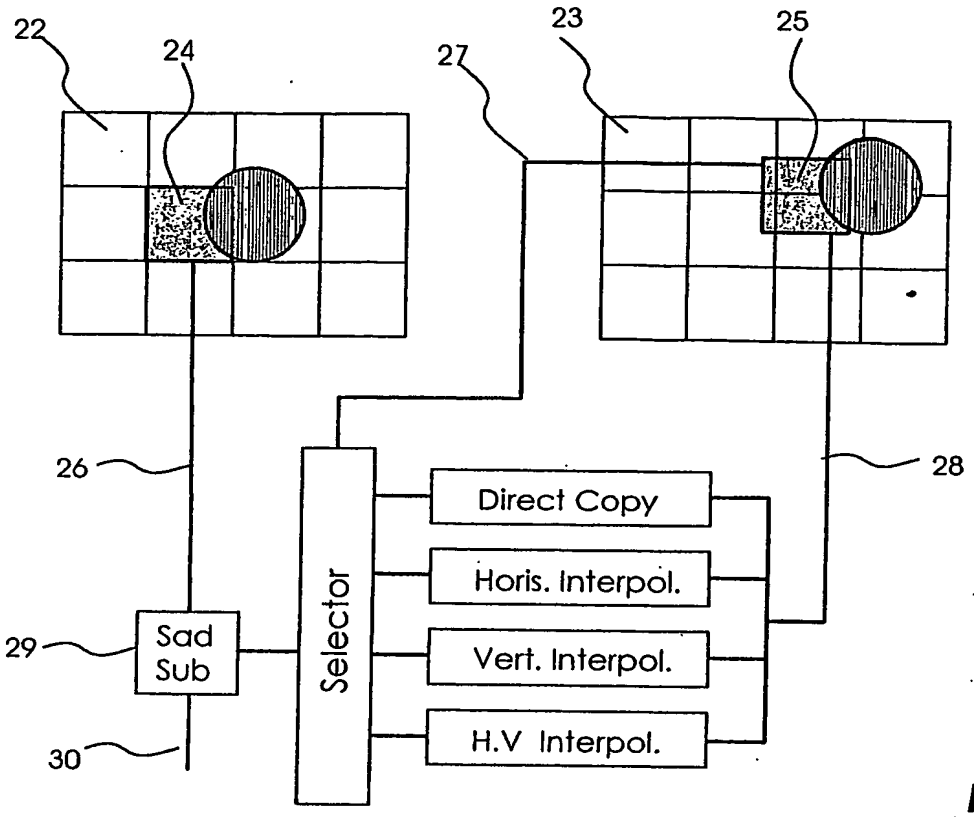

22
24
23
25
27
26
28
29
30
Sad Sub
Selector
Direct Copy
Horis. Interpol.
Vert. Interpol.
H.V Interpol.

Fig 4

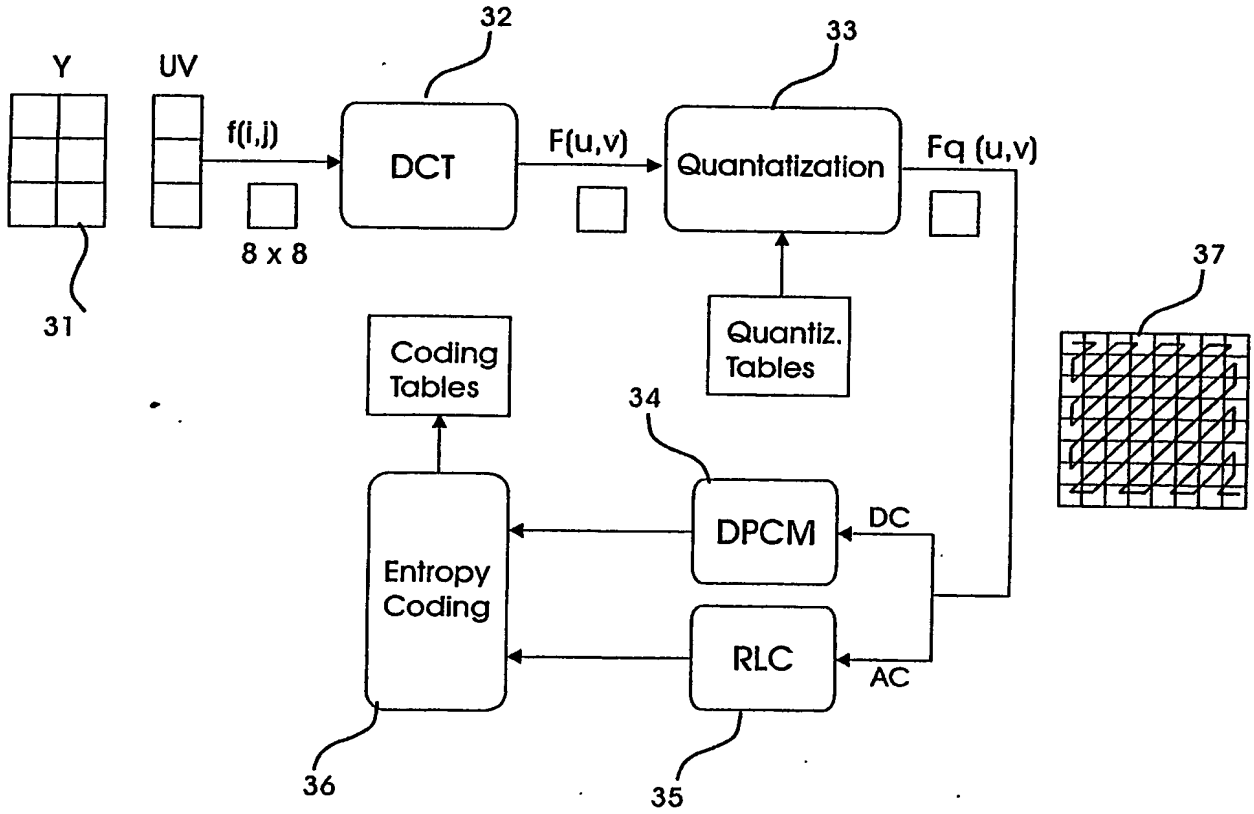

Y
UV
31
f(i,j)
8 x 8
32
DCT
F(u,v)
33
Quantatization
Fq (u,v)
Quantiz. Tables
37
Coding Tables
34
DPCM
DC
Entropy Coding
RLC
AC
36
35

Fig 5

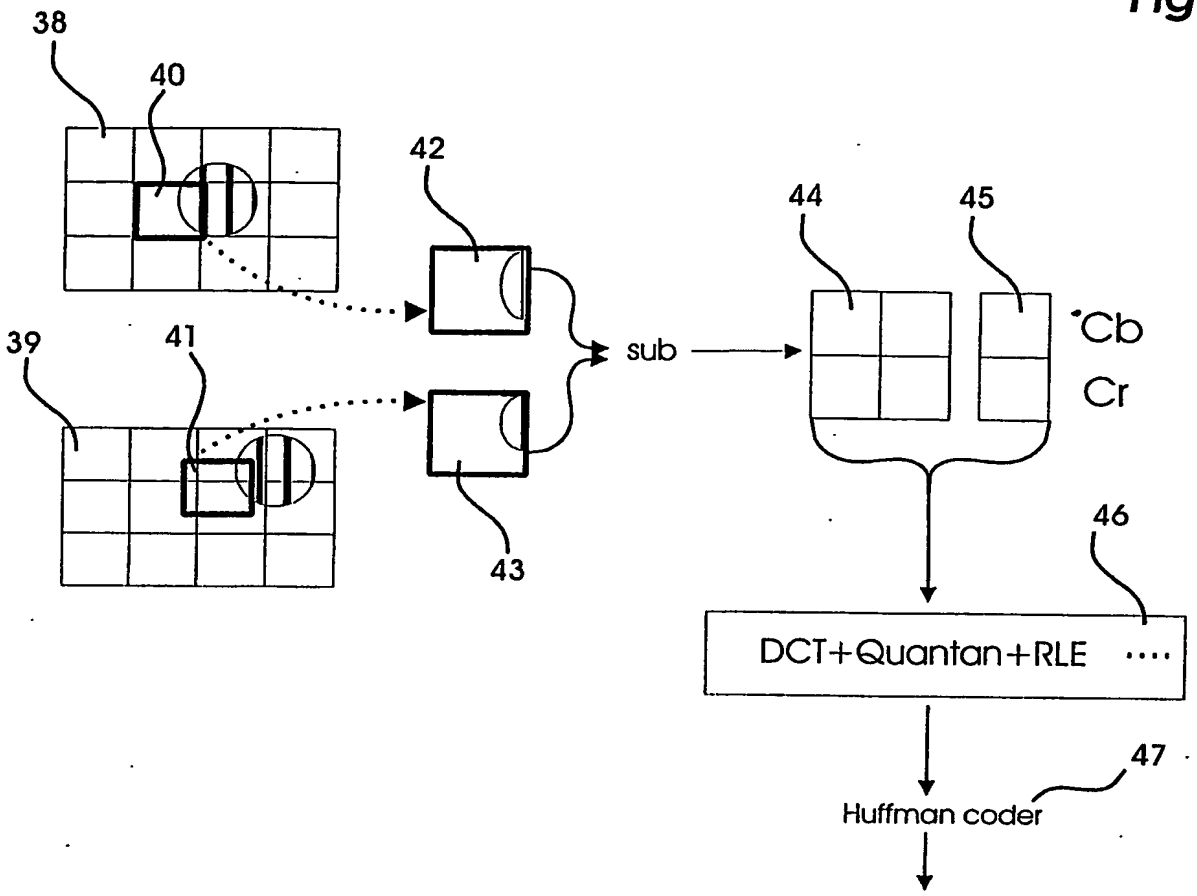

38
40
42
44
45
39
41
sub
Cb
Cr
43
46
DCT+Quantan+RLE ....
47
Huffman coder

Fig 6

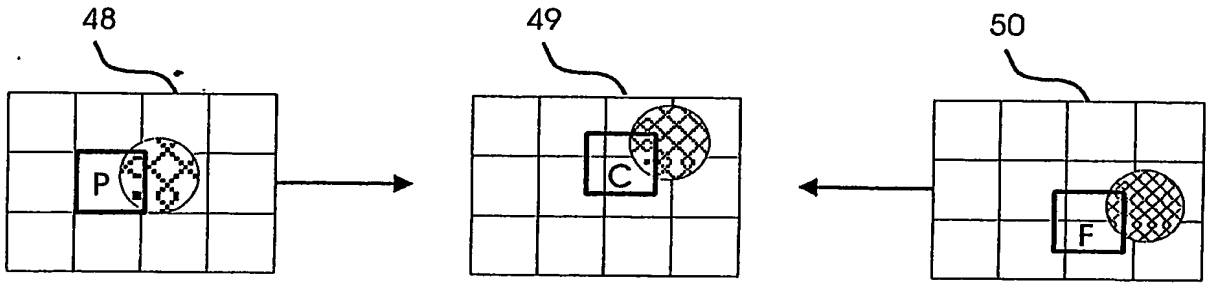

48
49
50
P
C
F

Fig 7

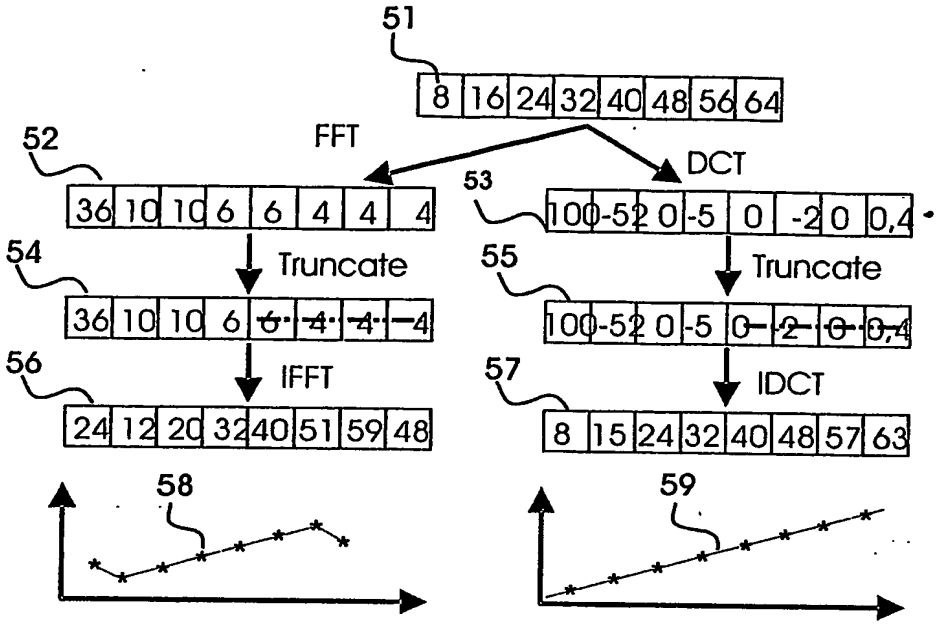

51
8 16 24 32 40 48 56 64
52
FFT
DCT
53
36 10 10 6 6 4 4 4
100 -52 0 -5 0 -2 0 0,4
54
Truncate
55
Truncate
36 10 10 6 0 4 4 4
100 -52 0 -5 0 2 0 0,4
56
IFFT
57
IDCT
24 12 20 32 40 51 59 48
8 15 24 32 40 48 57 63
58
59

Fig 8

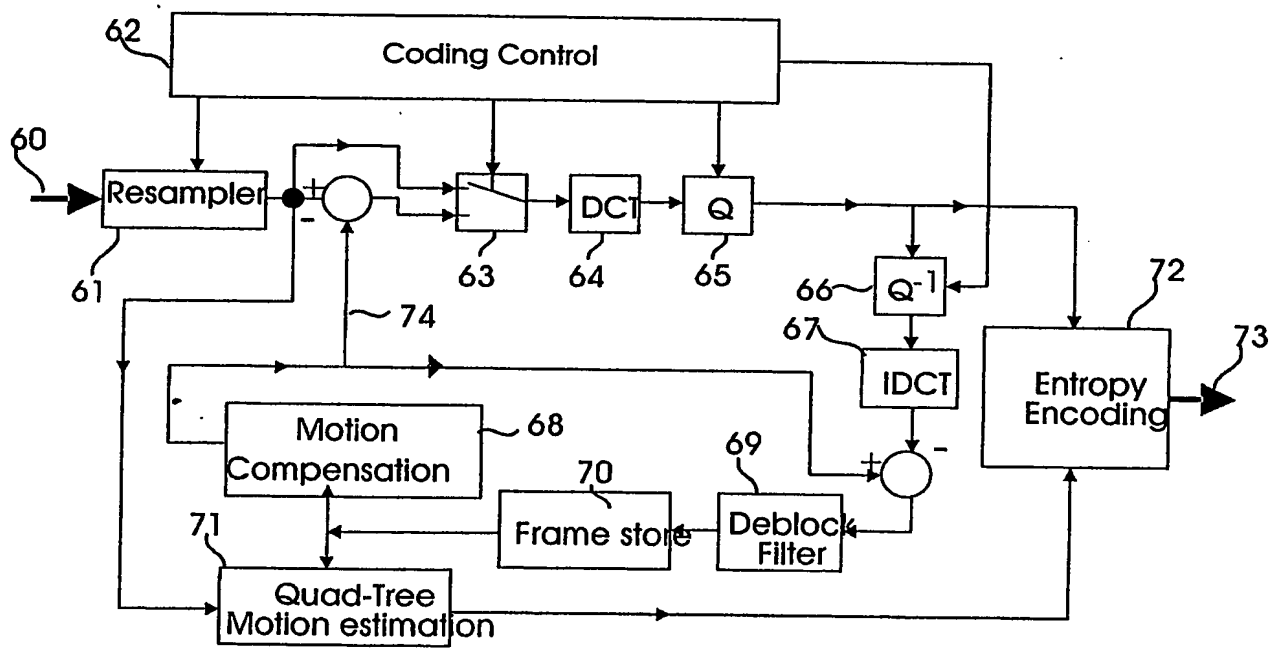

62
Coding Control
60
Resampler
61
63
DCT
64
Q
65
66
Q-1
67
IDCT
72
Entropy Encoding
73
74
Motion Compensation
68
69
70
Frame store
Deblock Filter
71
Quad-Tree Motion estimation

Fig 9

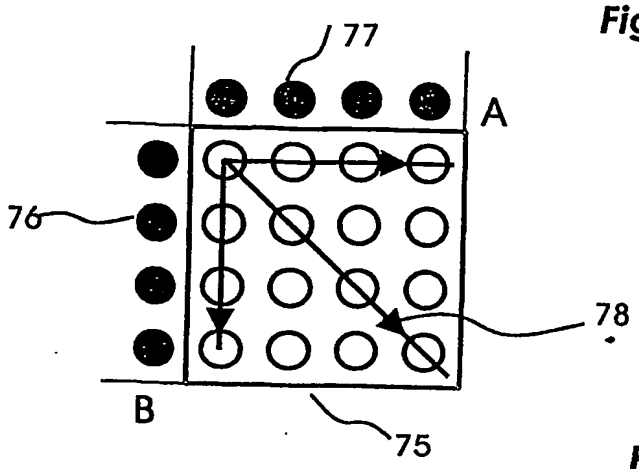


Fig 10

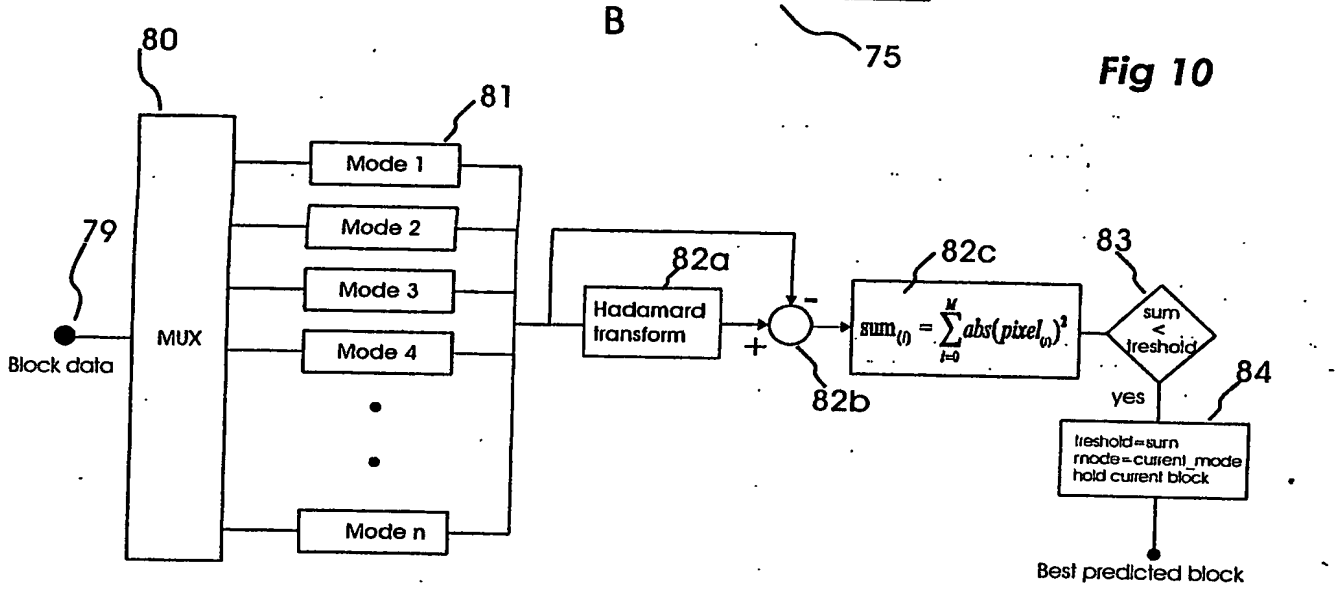


Fig 11

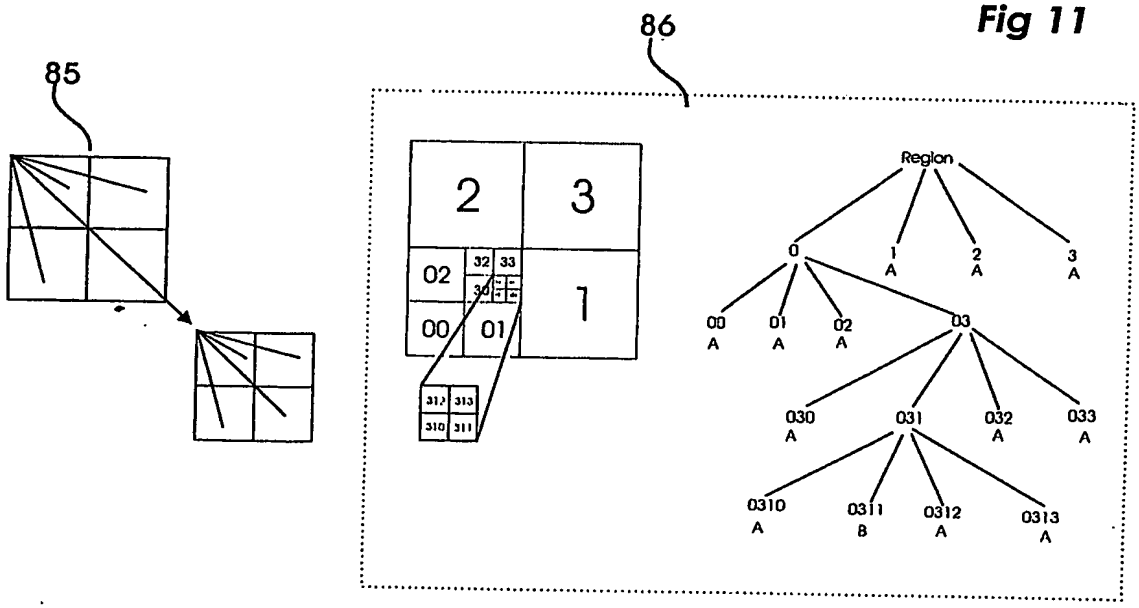
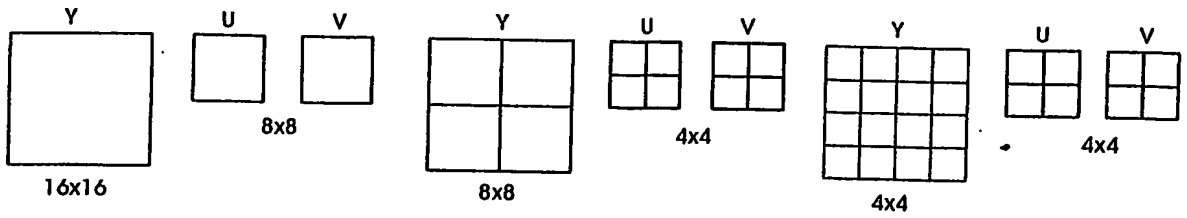


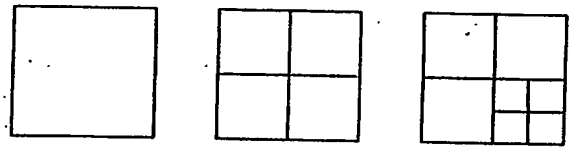
Fig 12

Basic block partition



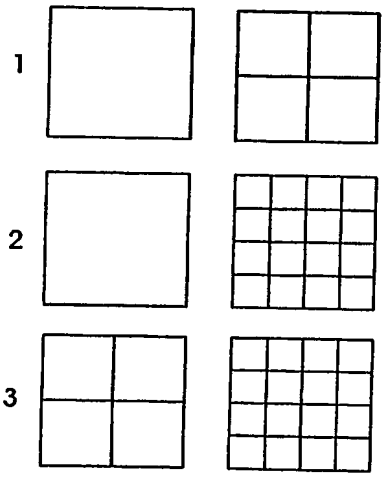
Three block mode

Fig 13



Two block mode

Fig 14



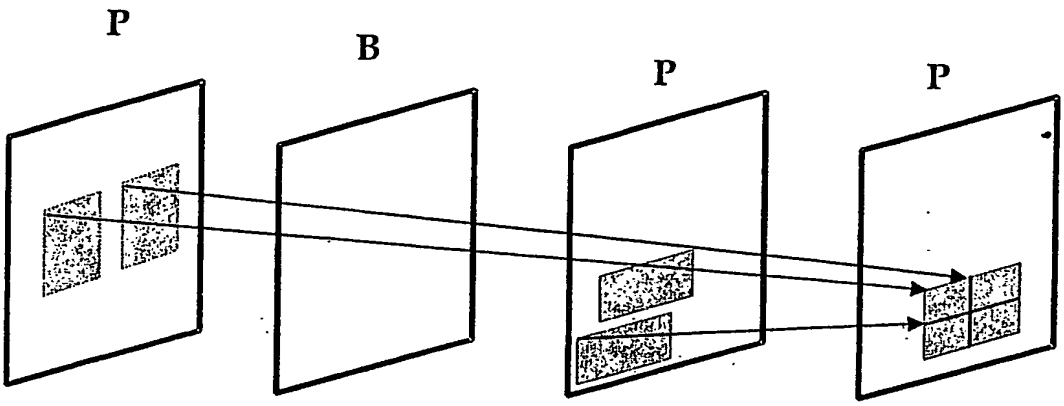


Fig. 15a

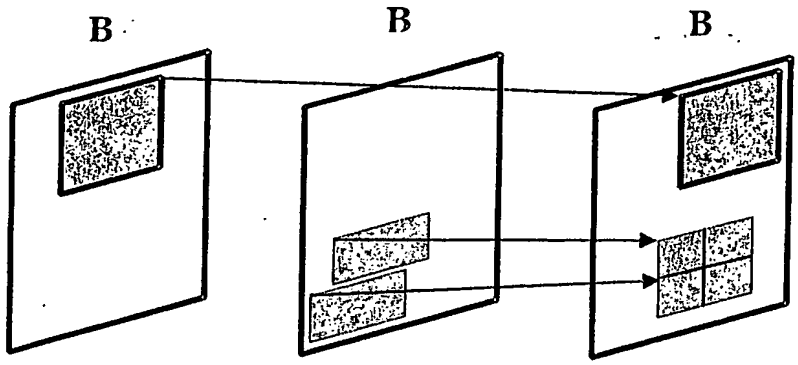


Fig. 15b

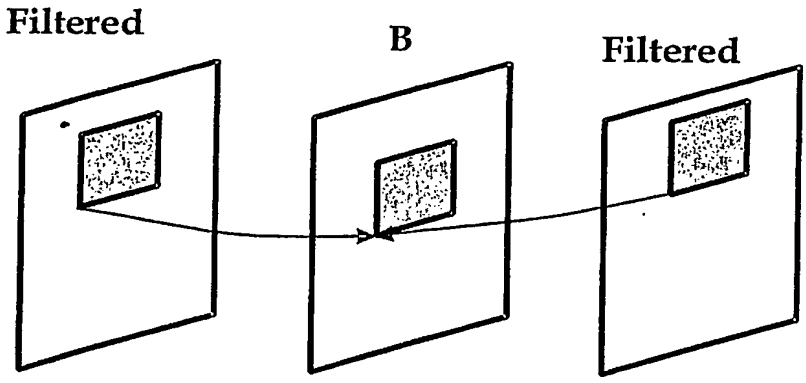
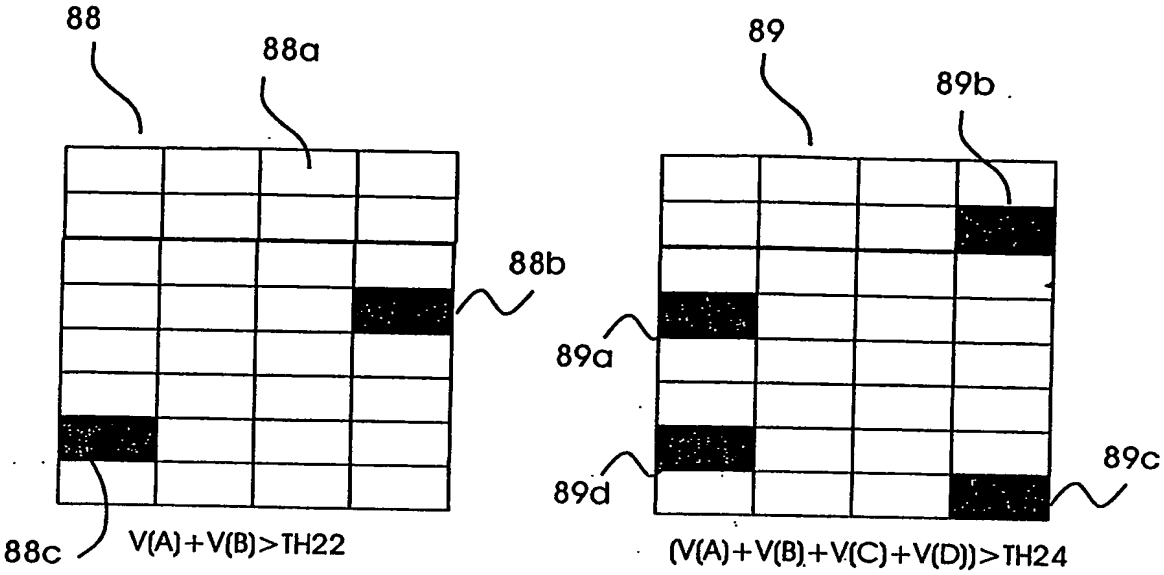
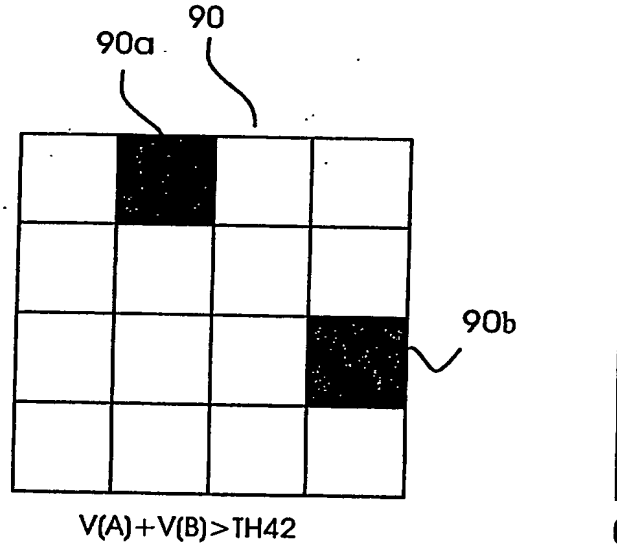
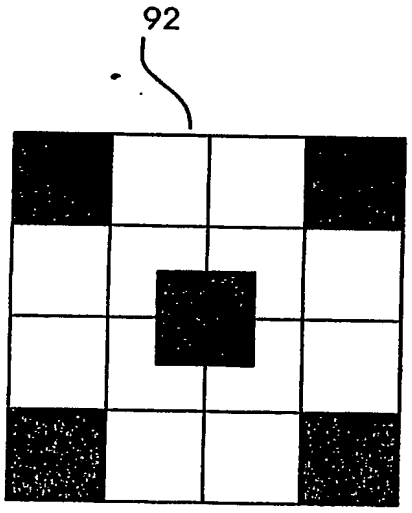


Fig. 15c

Fig 16


88
88a
88b
88c
V(A)+V(B)>TH22
89
89b
89a
89d
89c
(V(A)+V(B)+V(C)+V(D))>TH24


90a
90
90b
V(A)+V(B)>TH42
91
(V(A)+V(B)+V(C)+V(D))>TH42


92

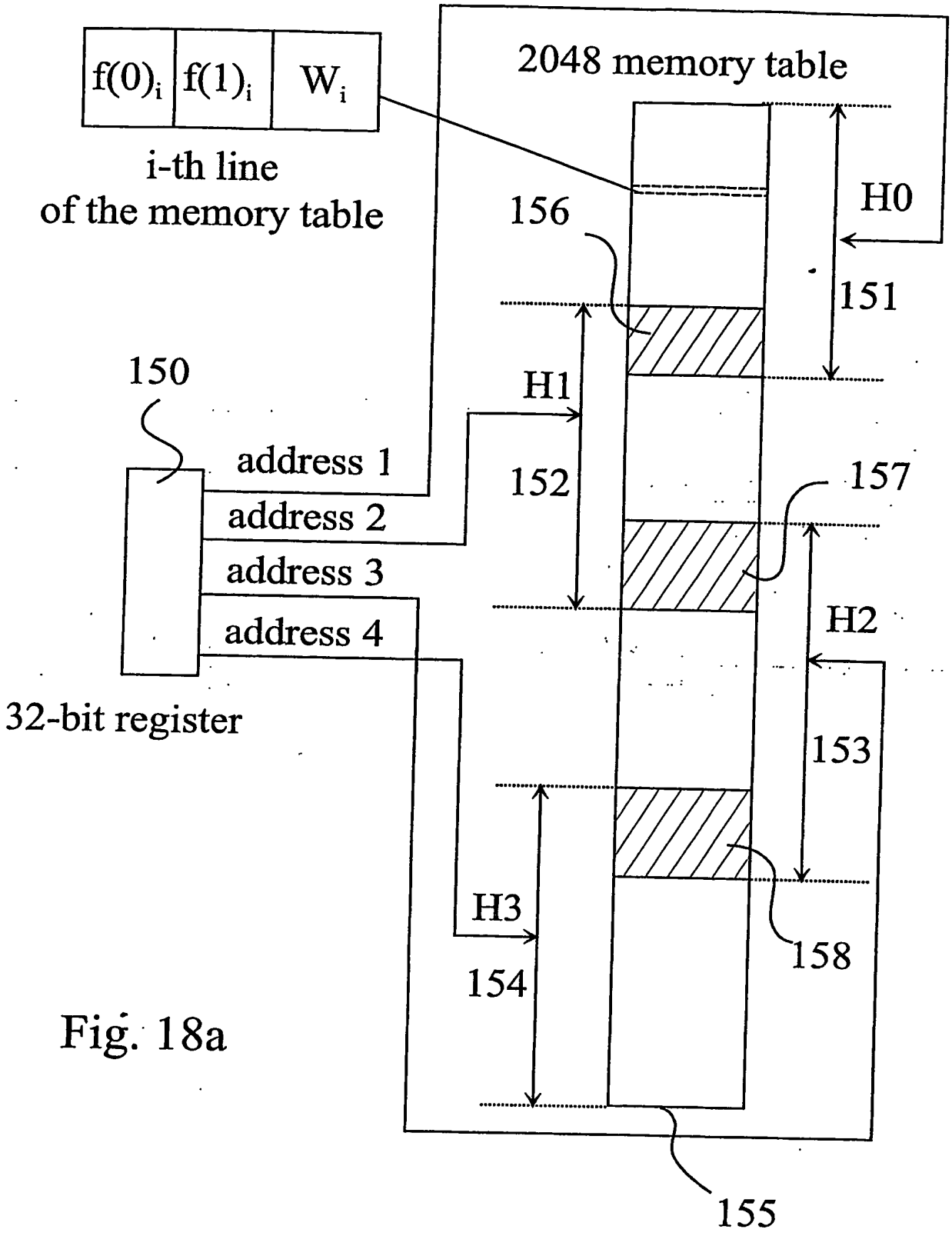
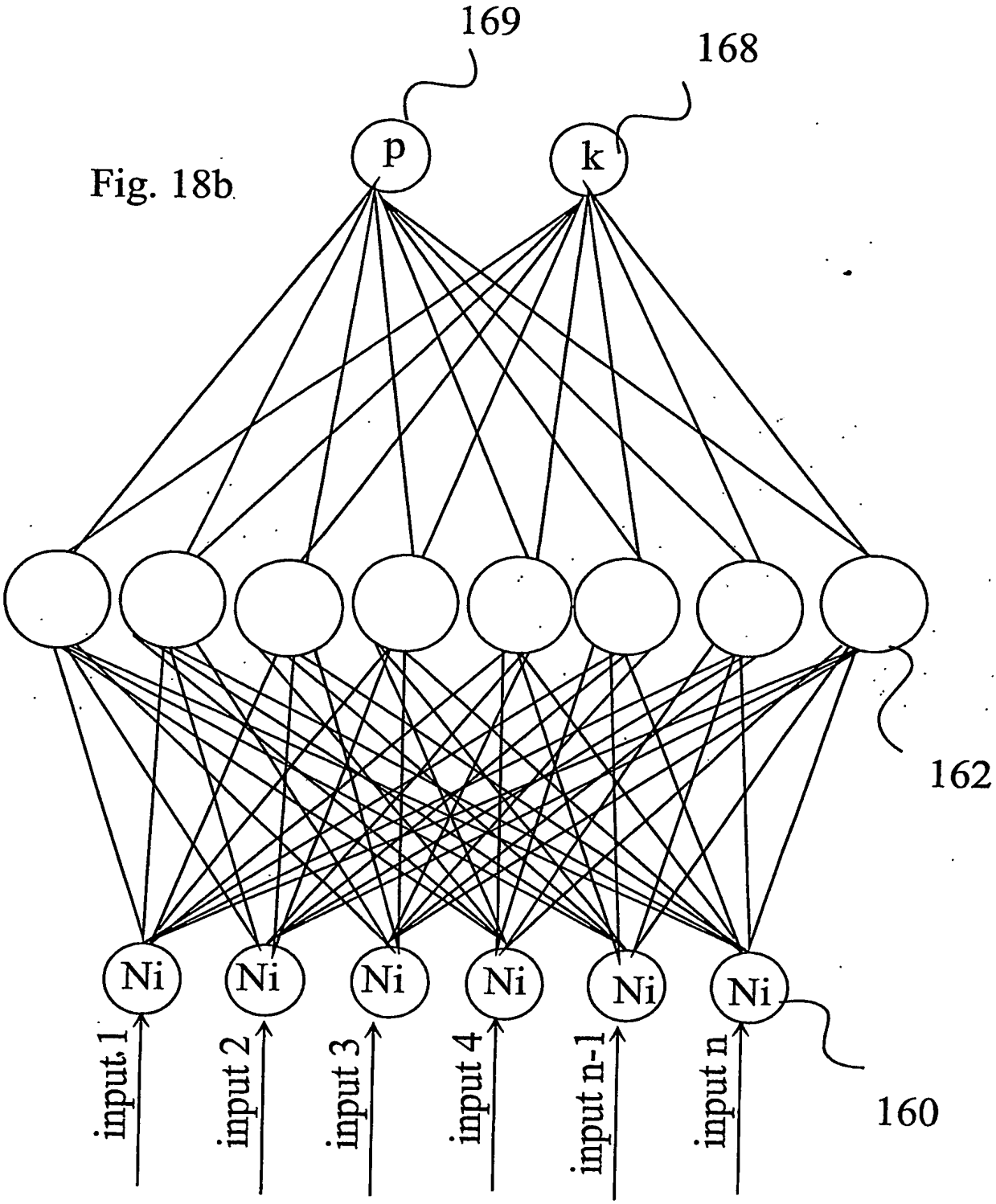

f(0)i
f(1)i
Wi
i-th line
of the memory table
2048 memory table
H0
156
151
150
H1
address 1
152
157
address 2
address 3
H2
address 4
32-bit register
153
H3
158
154
155

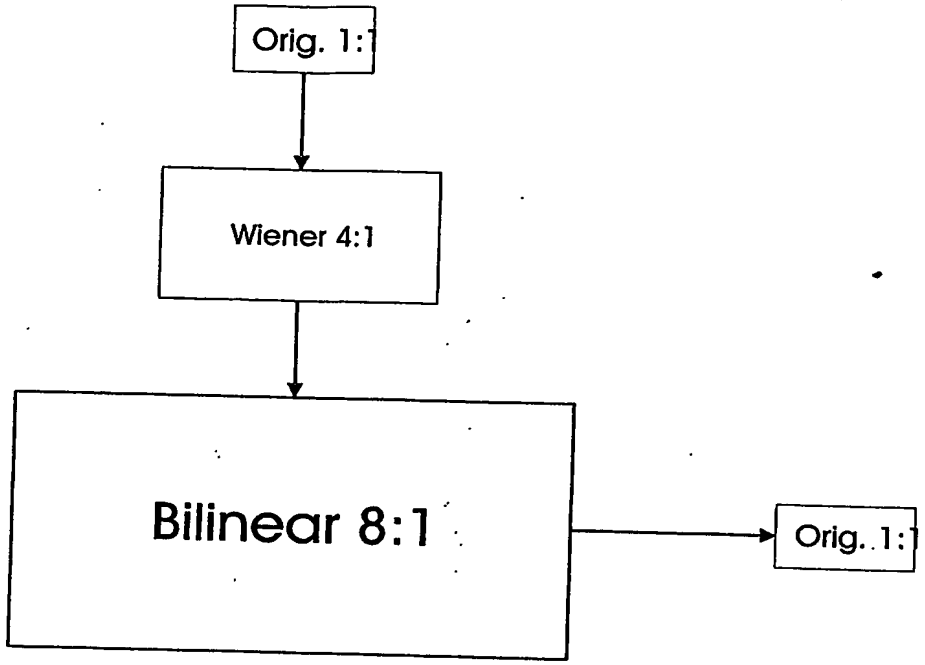
Fig. 18a

Fig. 18b


169
168
p
k
162
Ni
Ni
Ni
Ni
Ni
Ni
160
input 1
input 2
input 3
input 4
input n-1
input n

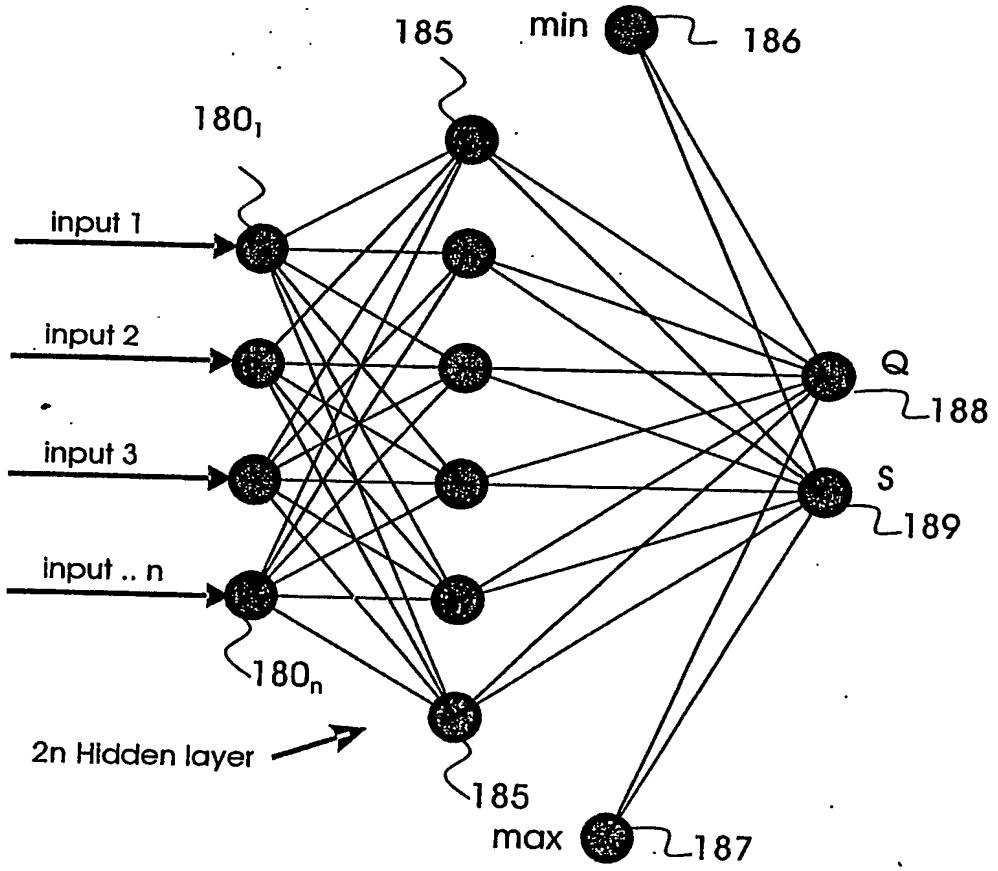
Reference image creation

Fig 17



Back propagation

Fig 18c



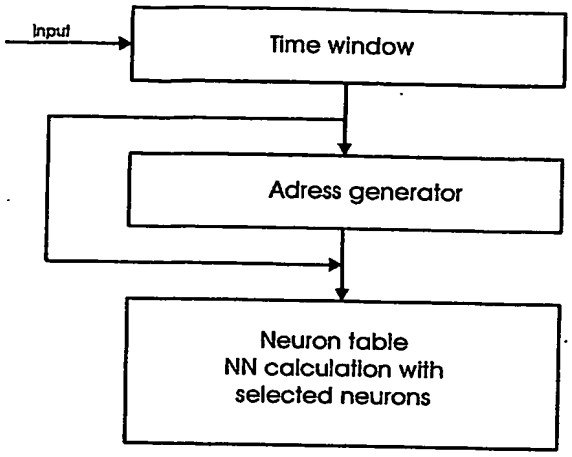
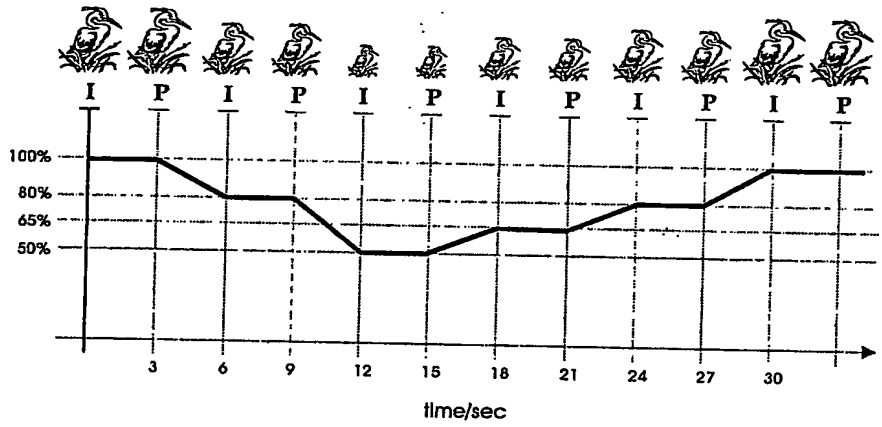


Fig 19

Fig 20



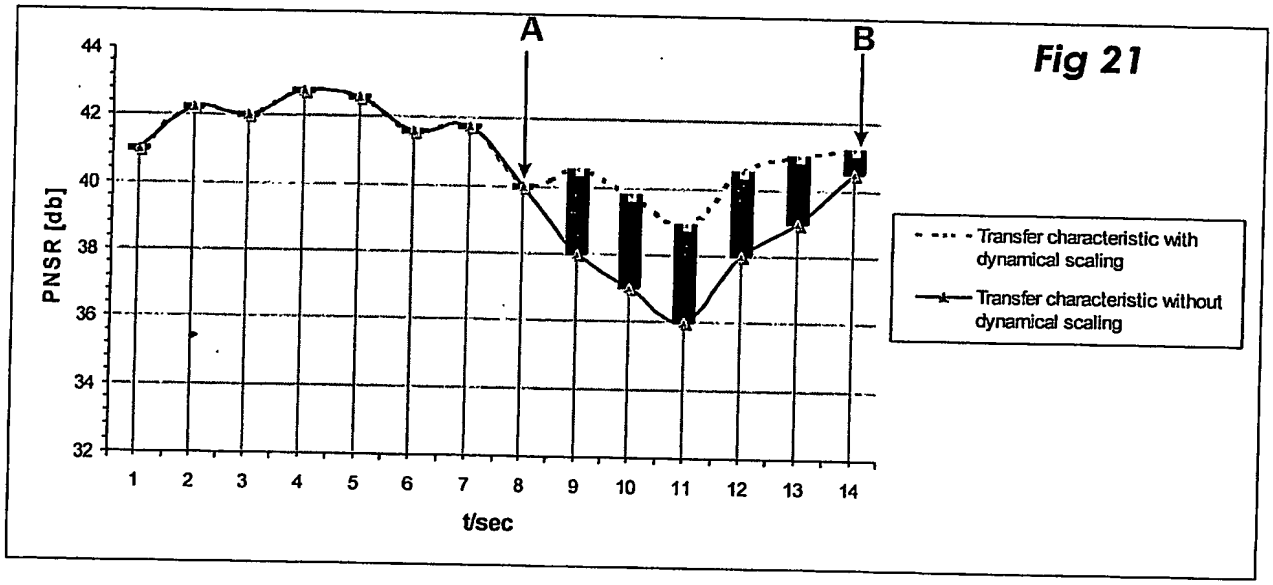


Fig 21

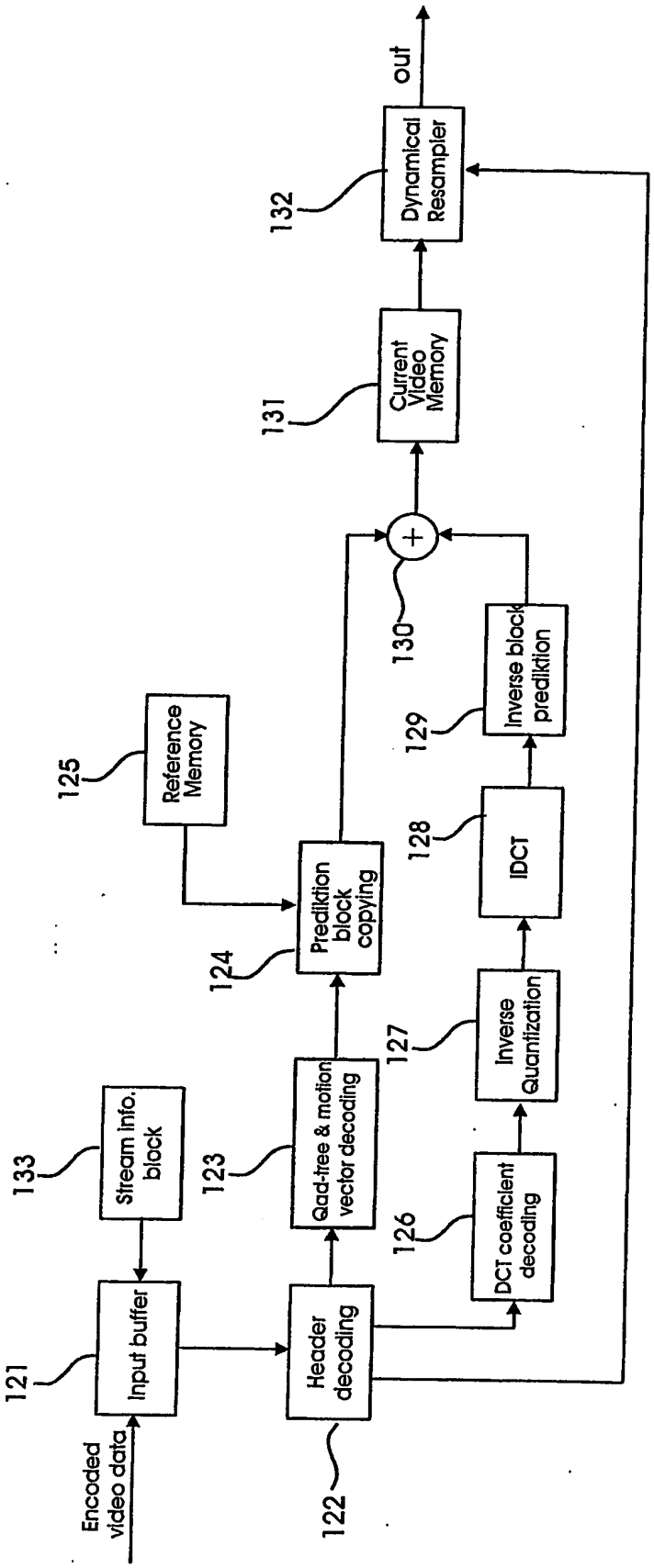

Encoded video data
Input buffer
121
Header decoding
122
Stream info. block
133
Qad-tree & motion vector decoding
123
DCT coefficient decoding
126
Inverse Quantization
127
IDCT
128
Inverse block prediktion
129
130
Prediktion block copying
124
Reference Memory
125
Current Video Memory
131
Dynamical Resampler
132
out

Fig. 22

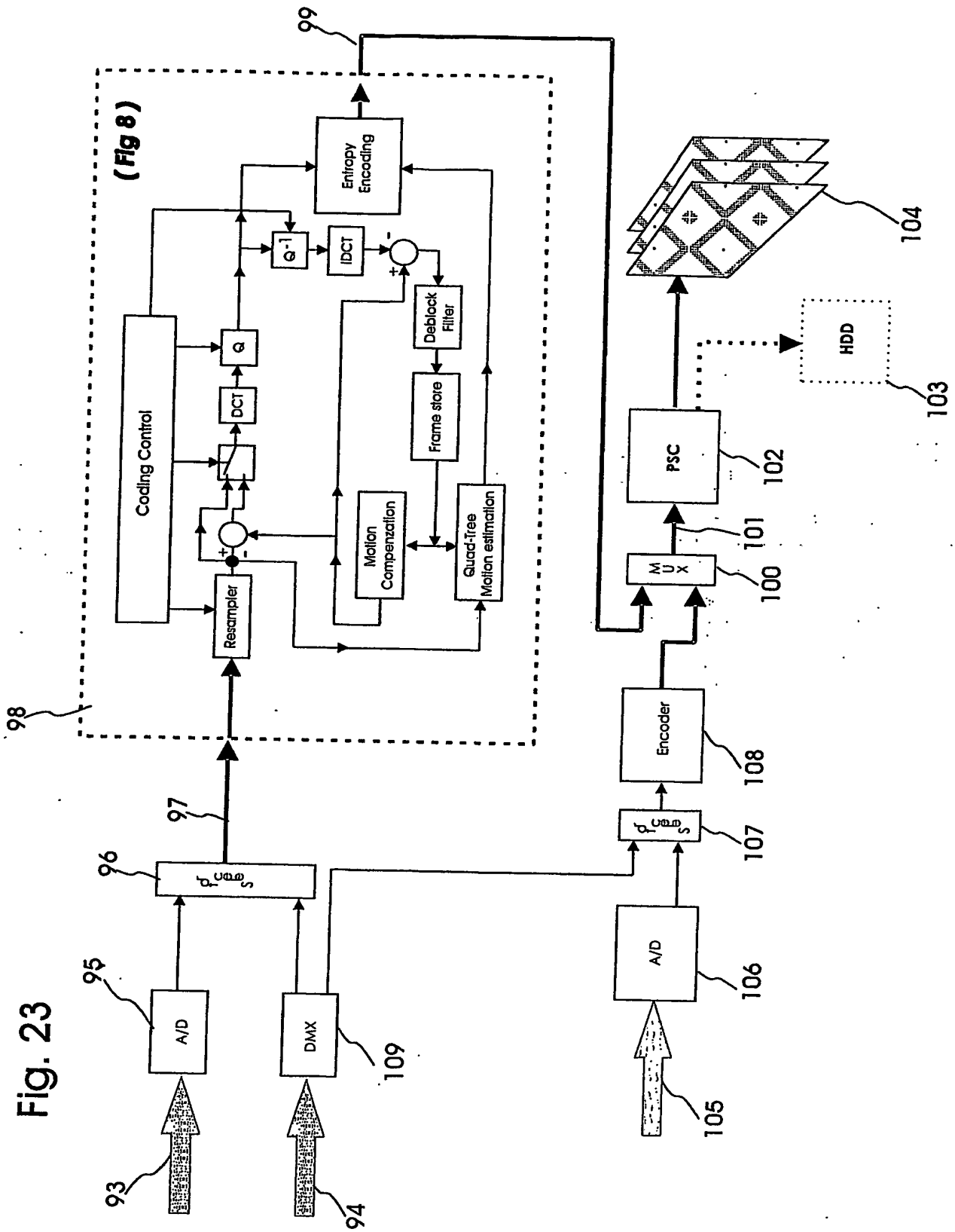
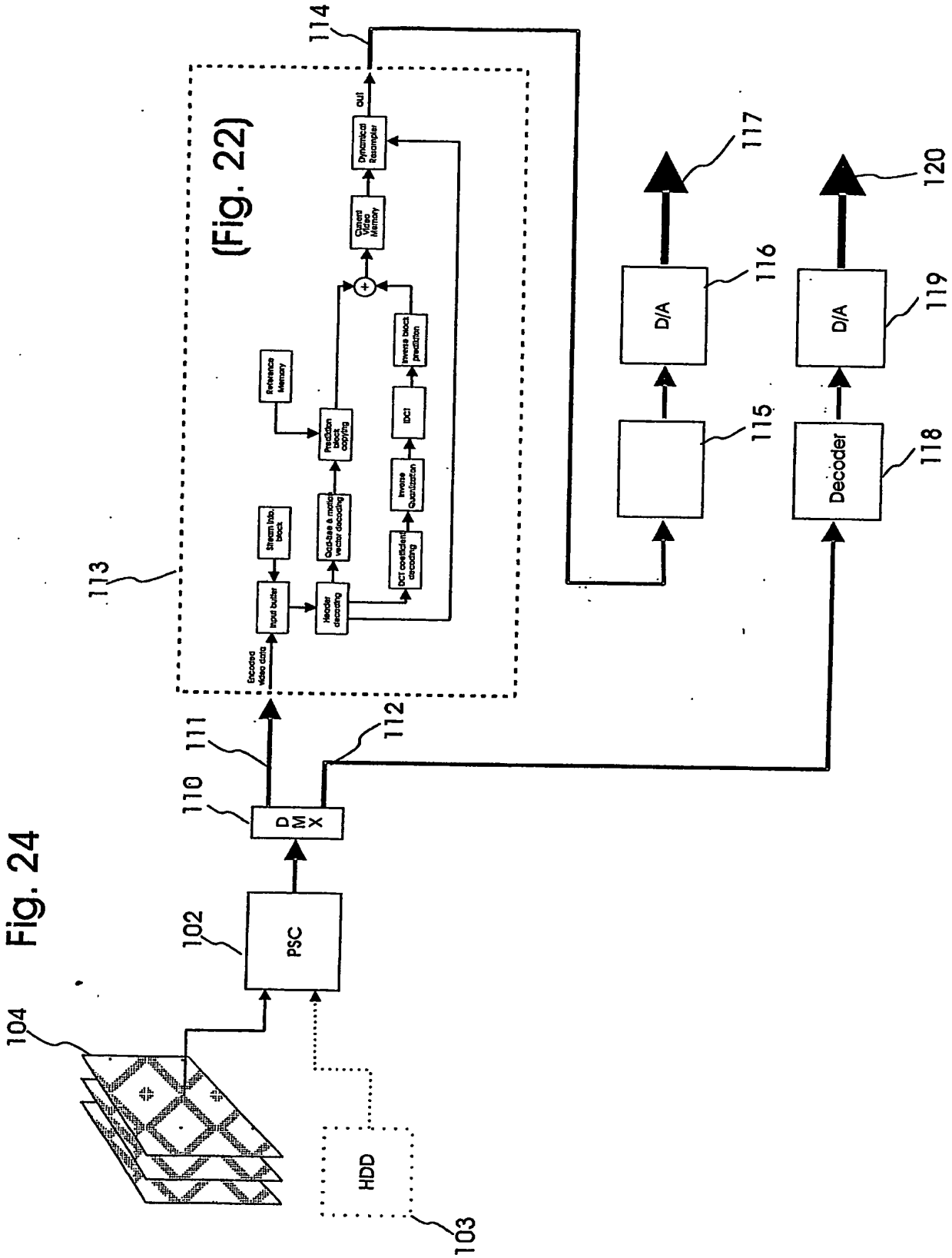

(Fig 8)
Entropy Encoding
Q-1
IDCT
Deblock Filter
Frame store
Motion Compenzation
Quad-Tree Motion estimation
Coding Control
Q
DCT
Resampler
98
99
104
HDD
103
PSC
102
101
MUX
100
Encoder
108
Process
107
A/D
106
105
Process
97
96
A/D
95
DMX
109
93
94

Fig. 23

Fig. 24


104
HDD
103
102
PSC
110
DMX
111
112
113
114
117
116
115
120
119
118
D/A
D/A
Decoder
(Fig. 22)
Encoded video data
Input buffer
Stream info. block
Header decoding
Decode a motion vector decoding
DCT coefficient decoding
Inverse Quantization
IDCT
Inverse block prediction
Prediction block copying
Reference Memory
Current Video Memory
Dynamical Resampler
out